IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of Brian A. Rosenfeld, M.D. and Michael Breslow, M.D.

Serial No.:	09/443,072	Group Art Unit:	2167
Filed:	11/18/99	Examiner:	Harle, J.

For: SYSTEM AND METHOD FOR PROVIDING CONTINUOUS, EXPERT NETWORK CRITICAL CARE SERVICES FROM A REMOTE LOCATION(S)

* * * * *

AFFIDAVIT BY DR. MERVYN MAZE

* * * * *

I, Dr. Mervyn Maze, residing in London, UK, state as follows:

1. I obtained my M.B., Ch. B. degree in Medicine in 1970 from University of Cape Town.

2. My experience includes thirty-one (31) years in Intensive Care Medicine in Cape Town, London and Stanford.

3. My Curriculum Vitae is attached to provide further information regarding my background and qualifications that allow me to make the statements contained herein.

4. I have read and reviewed Patent Application Serial No.: 09/443,072 and the attached amended claim set.

5. I have read and reviewed the attached article "Intensive care unit telemedicine: Alternate paradigm for providing continuous care" from *Critical Care Medicine* 2000 Vol. 28, No. 12 by Rosenfeld et al.(the "Rosenfeld Study") describing the clinical study for which Dr. Rosenfeld was the Principal Investigator. I am familiar with the procedures described in this paper.

6. I believe the claimed invention is materially different from the Rosenfeld Study for at least the following reasons:

   - The claimed invention provides centralized monitoring of a plurality of geographically disparate ICUs by intensivists. In contrast, the Rosenfeld Study monitored only

one single specialty 10-bed ICU. It is the capability of the claimed invention to allow a physician-lead team, made up of intensive care specialists, critical care nurses and clerical support personnel (care team), to care for patients in multiple ICU's in disparate geographic locations, either within a building or in different buildings, simultaneously that creates new efficiencies and offers the potential to change the care paradigm for ICU patients. Thus, the expertise of the entire care team is leveraged over many ICU patients, who could not otherwise (without the claimed invention) be cared for by a single team.

- In contrast to the Rosenfeld Study where a single intensivist monitored faxed information, or initiated communication to view a single patient's bedside monitor over a personal computer, the claimed invention uses a computerized patient care management system that feeds key clinical information on multiple ICU patients simultaneously to the remote monitoring care team. The claimed invention includes imbedded decision support algorithms that further assist the care team in the continuous monitoring of large numbers of ICU patients. The claimed invention analyzes simultaneously all incoming patient physiologic data (from bedside monitors) and laboratory data and provides visual alarms for the care team that alerts them care to detrimental trends in patient vital signs and/or laboratory values of which the care team might not otherwise be aware of. These features of the claimed invention allow a single physician-led team to care for patients in multiple, geographically disparate sites simultaneously. These features are totally lacking from the Rosenfeld Study and are not suggested by the study in any way.

- The claimed invention provides for 24-hour dedicated monitoring/management by a care team. The care team provides this service from a dedicated monitoring facility comprising equipment and decision support algorithms developed explicitly for this purpose. The claimed invention provides for automated warnings relating to vital signs and trends in vital signs, provides assessment of those trends for the intensivist, and makes recommendations for intervention available for consideration by the intensivist. The care team has no other care responsibilities during the time it is monitoring/managing the multiple geographically disparate ICU(s). The attention of the care team is devoted to the ICU patients and only the ICU patients.

- In contrast to the present invention, the Rosenfeld Study provided only 4-5 hours of ad hoc monitoring by a single intensivist from the intensivist's home (i.e. no continuous monitoring, no support personnel, no dedicated facility). Further, the intensivist monitoring was not triggered in any automated way by any form of decision support algorithms, but was conducted periodically by the intensivist, as he deemed fit and time permitted. The intensivist in the Rosenfeld Study was solely responsible for analyzing the data, deducing trends in the patient's vital signs, assessing the meaning of the trends and, deciding on the corrective action to be taken - without access to any software tools to assist in these tasks. The software tools in the claimed invention create efficiencies that enable a single, intensivist-led team to monitor and care for large numbers of ICU patients.

7. I believe that remote, 24-hour intensivist-lead care team monitoring of ICU patients in multiple geographically disparate locations is not taught by the Rosenfeld Study nor would one of skill in the art make the required changes to the equipment and procedures of the Rosenfeld Study to arrive at the present invention for at least the following reasons:

- Remote monitoring and direct intervention of ICU patients is contrary to prior accepted practice, where physicians are physically present in the ICU.

- The generally accepted medical monitoring paradigm in ICU's with intensivists on-staff is for the intensivists to conduct rounds with the staff, and for ICU nurses and other physicians to notify the intensivists of emergencies on an as-needed basis. The Rosenfeld Study subscribed to this generally accepted model of intensivist deployment in ICU's, daily rounds, periodic monitoring, and responding to requests for assistance from on-site personnel.

- The monitoring paradigm presently employed by hospitals is having lower-skilled bedside nurses perform this function. These personnel, with only bedside patient monitoring equipment and visual inspection, are relied on to make the decision to contact specialists, such as intensivists, when problems are detected.

- The invention described and claimed in Application Serial No.: 09/443,072 does not rely on the paradigm of primary monitoring by bedside personnel, with secondary calls to intensivists, but rather has the off-site intensivist-lead care team provide continuous, 24-hour monitoring. The care team is capable of unilaterally entering the patient room for video and audio communication, is supported by decision support algorithms that automatically alert the intensivist to detrimental trends in a patients' vital signs and facilitate the intensivist contacting the lower-skilled on-site personnel when interventions are necessary. Although the Rosenfeld Study included intensivist-initiated intervention through on-site physicians, the lack of 24-hour continuous monitoring illustrates that the prior art monitoring paradigm was still considered valid by those in the Rosenfeld Study.

- The Rosenfeld Study disclosed nothing of the technological nature disclosed in the claimed invention. Indeed the only way the intensivist had contact with the ICU and/or patient data was for the intensivist to intermittently conduct active dial-up direct monitoring of the real-time bedside waveforms, request information by fax machine, or to telephonically contact an ICU nurse and have equipment (such as a video camera) physically moved to the desired patient location. None of this activity was in response to any system of automated notification to the intensivist and most required actions by on-site personnel.

- The technology tools that were developed in the current invention, such a smart alarms and physiologic data trend analysis, instantly available video monitoring from permanent camera installations in each ICU room, and comprehensive data links to the command center, were not available at the time of the original clinical study nor was their use suggested in any way.

- The initial clinical study never addressed the potential for a single monitoring site for overseeing the care of patients in multiple ICU's, thereby leveraging the expertise of an intensivist over a number of ICU's in geographically disparate locations.

- The original trial technology suite could not have been used over multiple ICU's in different geographic locations.

- At the time the clinical study it was unprecedented to have an intensivist functioning in a dedicated monitoring capacity and NOT attending to other functions.

- During the Rosenfeld study, an intensivist was required to monitor, on an ad hoc basis, over a 24-hour shift. Continuous monitoring over such a long time period is too physically and mentally taxing to be feasible. In contrast, the system of the current invention allows for constant monitoring by an intensivist-led care team functioning on a normal 6-12 hour shift thereby alleviating both the physical and mental stress associated with a 24-hour shift.

- The Rosenfeld study was not the same model as that used in the present invention's model. The functioning of the current system constitutes an entirely different manner of monitoring multiple, geographically disparate ICU's than the clinical study which monitored but a single ICU without the analytical support offered in the present invention system.

- For a variety of licensing and clinical reasons, the clinical study was not a feasible model for hospitals to use for ICU care. Individual hospitals would not have established intensivists at remote locations to monitor a single ICU at the hospital, having only the technology described in the study as a supporting infrastructure.

- When compared to the prior standard of care, that is, an on-call intensivist responding to calls from on-site nurses, the results of using the present invention are remarkable, resulting in far better outcomes for ICU patients and far earlier intervention in life-threatening trends.

8. I believe that providing either a computerized patient care management system or a set of decision support algorithms to a remote care team (or a combination thereof) is not taught by the Rosenfeld Study, and neither the paper nor the standard practices of the time would suggest such a modification for at least the following reasons:

    - The use of computerized patient care management systems at the time of the invention was limited, even in major hospitals, to the recording of patient data for later review by physicians, and to isolated on-site systems that sound an audible alarm when an extreme condition in a patient's vital signs is reached (i.e. cardiac arrest). Further, computerized decision support algorithms in the medical community were not available.

- When computerized patient care management systems are deployed by hospitals, they are provided at the bedside or ICU nursing stations. They are not provided remotely to a physician. Instead, physicians are contacted by a bedside nurse (via a "pager") to inform them that a problem has developed.

- Since the accepted wisdom of the medical community is to deploy patient care management systems and/or paper-based decision support for lower-skilled medical care givers on-site, there would be no reason to deploy these systems at a remote site for a care giver having the higher-skills of an intensivist.

9. The Rosenfeld Study evaluated the potential of "currently available technology" to "extend the effective reach of intensivists," but failed to disclose or suggest any of the additional technology of the presently claimed invention, such as (i) intensivist access to patient care management systems and/or decision support algorithms, that are required to effectively scale the monitoring to a greater number of patients and (ii) central command center monitoring that is required to effect a viable remote ICU monitoring model, (iii) monitoring of a plurality of geographically disparate healthcare locations/ICUs from a single remote command center, (iv) the use of a care team to enable monitoring and intervention on multiple patients in geographically different locations and (v) a data server/data warehouse for storing and analyzing data.

Date: October 3, 2002

M. MAFF, M.D.
Title Professor, Chair, Anesthesia and Intensive C
Affiliation Imperial College, London

WITNESS MY HAND and seal this 4th day of October, 2002.

PETER BARNES
Type Name Here

STATE OF London)
) ss:
COUNTY OF UK)

On this ____ day of _____, 2002 personally appeared before me _____ to me known, and known by me to be the same person described in and who executed the foregoing instrument, and acknowledged that he executed the same, of his own free will and for the purposes set forth.

Notary Public

My Commission Expires: September 2004 in UK.

CURRICULUM VITAE

MERVYN MAZE, M.B. Ch.B., F.R.C.P.
Chair, Department of Anaesthesia and Intensive Care
Faculty of Medicine, Imperial College, London, UK

Date of Birth : July 11, 1947
Place of Birth: Cape Town, Republic of South Africa
Citizenship: United States
Social Security: 558-41-6848
Marital Status: Married, 2 children

Office Addresses
Magill Department of Anaesthetics
Imperial College,
Chelsea and Westminster Hospital,
369 Fulham Road,
London SW10 9NH
Tel #: (020)8746-8035; Fax #: (020)8237-5109; m.maze@ic.ac.uk

Education:

1965-1970	Bachelor of Medicine, Bachelor of Surgery (M.B. Ch.B.), University of Cape Town, South Africa. Degree conferred with honors
1973 (Mar)	Member of the Royal College of Physicians, UK (M.R.C.P.,U.K.),
1982 (Apr)	Certified by the American Board of Anesthesiology
1996	Fellow of the Royal College of Physicians, UK (F.R.C.P.)
1999	Fellow of the Royal College of Anaesthetists, UK (F.R.C.A.)
2002	Fellow of the Academy of Medical Sciences (FMedSci)

Postgraduate Education and Professional Experience

1971	Resident Medical Officer (Intern), Groote Schuur Hospital, Cape Town, South Africa
1972	Senior House Officer, Department of Medicine, Groote Schuur Hospital, e Cape Town, Sout Africa
1973-1976	Registrar, Professorial Department of Medicine, Royal Free Hospital, London
1976-1979	Postdoctoral Research Fellow, Department of Medicine, Stanford University
1979-1981	Resident, Department of Anesthesia, Stanford University
1981-1987	Assistant Professor, Department of Anesthesia, Stanford University
1/1/88-11/94	Associate Professor, Department of Anesthesia, Stanford University
12/94 -1999	Professor, Department of Anesthesia, Stanford University
1981-1999	Staff Physician, Veterans Affairs, Palo Alto Health Care System
1987 -1999	Neuroscience Graduate Program, Stanford University
1995- 1997	Director of Research, Department of Anesthesia, Stanford University
1997-1999	Associate Chair for Research, Department of Anesthesia, Stanford University
1999-Present	Sir Ivan Magill Professor of Anaesthetics, Imperial College
2000-Present	Head, Department of Anaesthetics and Intensive Care, Imperial College
2000-Present	Vice Chair, Division of Surgery, Anaesthetics and Intensive Care, Imperial College
2001-Present	Director, Research and Development, Chelsea and Westminster Hospital, London, UK
2002- Present	Director, Multi-Disciplinary Education Training and Research, Chelsea and Westminste Hospital, London, UK
2002- Present	Campus Dean for the Chelsea and Westminster Hospital Site, Imperial College, London

Research Support

National Institutes of Health

1977	NIH Membrane Pathology Postdoctoral Research Fellowship #5732 GM 07026-03;	Trainee
1978	NIH Postdoctoral Research Fellowship #1F32 AM 05987-01;	Trainee
1981-1983	NIH New Investigator Research Award #1R23 GM 30232 Catecholamine Halothane Interactions during anesthesia	Principal Investigator
1982	NIH Biomedical Research Support Grant, #2507-RR5353-20 Adrenergic function and cardiopulmonary bypass	Principal Investigator
1983-1993	NIH # R01 GM 30232 Adrenergic Actions During Anesthesia With Volatile Agents	Principal Investigator
1993-2002	NIH # R01 GM 30232 Actions Of Alpha-2 Adrenergic Agonists In Anesthesia	Principal Investigator
1998-2003	NIH# RO1 GM 57545 Mechanisms for tolerance to Actions of alpha-2 agonists	Principal Investigator

Department of Veterans Affairs

1981-1983	RAG; Myocardial sensitization by halothane to exogenous catecholamines	Principal Investigator
1988-2004	VA Merit Review; Functional effects of anesthesia on the adrenergic nervous system	Principal Investigator
1989-1992	VA-DOD Collaborative Project; Perioperative use of clonidine as an adjunctive anesthetic agent	Co-Principal Investigator

Other Non-Federal Funding

1987-1989	International Anesthesia Research Society - BB Sankey Award; Anesthetic depth and and central monoaminergic neurotransmission	Principal Investigator
1987-1988	American Cancer Society; Sympathetic nervous system in a rat model of pheochromocytoma	Principal Investigator
1986	American Heart Association, California Affiliate, Grant-in-aid 86N133	Principal Investigator

United Kingdom

1999-2004	MRC Programme Grant; Endogenous and Exogenous actions of alpha-2 agonists in Anaesthesia and Analgesia	Principal Investigator
2000-2005	MRC Co-operative Group Grant; General Anaesthesia and Neuronal Excitability	Co-Principal Investigator
2000-2001	JIF Award; General Anaesthesia: from Molecular Actions to Neuronal Pathways	Co-Principal Investigator
2001-2003	MRC Clinical Trial; A clinical trial as proof of principal of the analgesic effectiveness of cannabinoids on post-operative pain	Co-Principal Investigator

Professional Activities

Departmental

1981-1990	Resident's Education Committee, Stanford University
1987-1999	Appointment and Promotions Committee, Stanford University
1995 - 1999	Research Committee, Stanford University

University and Hospital

1982-Present	Well-Being of Physicians ; Stanford Health Services
1985-1995	Animal Care and Use Committee, Veterans Affairs Hospital
1988-1992	Minority Admissions Advisory Panel, Stanford University
1992-1999	Medical School Admission Committee, Stanford University
1992-1999	South African Faculty Initiative Committee, Stanford University
1996- 1999	Laboratory Safety Committee, Stanford University
2001-Present	Finance Committee, Faculty of Medicine, Imperial College
2001-Present	Research Committee, Faculty of Medicine, Imperial College
2001-Present	NHS-Imperial College Liaison Group
2002- Present	Principal's Advisory Group

National

1988-1992	Scientific Advisory Board, Association of University Anesthesiologists
1988-1992	Associate Editor, Anesthesiology
1995 - 1998	Councillor, Association of University Anesthesiologists
1995-1999	Associate Editor, Anesthesiology
1999-present	Editor, Anesthesiology

Current Membership in Professional Societies

California Society of Anesthesiologists
International Anesthesia Research Society
American Society of Anesthesiologists
California Medical Association
Association of University Anesthesiologists
American Association for the Advancement of Science
Society for Neuroscience

Research Trainees

Undergraduate - 22
Medical Students - 23
Postdoctoral Fellows - 20
Ph.D Students - 5

BIBLIOGRAPHY

Scientific Articles

1. Maze M, Novis BH, Lurie BB: Involuntary muscle involvement in dystrophia myotonica. S African Med J 47:1947-1950, 1973.

2. Maze M, Novis BH, Lurie BB, Bank S: Involuntary muscle involvement in dystrophia Myotonica. Case report. S Afr Med J 47; 1947-50, 1973

3. James O, Wood J, Maze M, Gayotto LC, Williams HS, Sherlock S: Proceedings: 67Ga citrate liver scanning: evaluation of its use in 80 patients and evidence of intrahepatic distribution by autoradiography. Gut 15: 342, 1974.

4. Maze M, Wood JJ: 67Ga-uptake in liver lesions. J Nuclear Med 16:442-443, 1975

5. Agnew J, Maze M, Mitchell C: Review Article: Pancreatic scanning. Br J Radiol 49:979-995, 1976.

6. Agnew J, Maze M: Clinical trial of four pancreatic scanning agents. Br J Radiol 51:206-209, 1978.

7. Maze M, Gray GM: Intestinal brush border amino-oligopeptidases: Cytosol precursors of the membrane enzyme. Biochemistry 19:2351-2358, 1980.

8. Samuels SI, Maze M: Beta-receptor blockade following the use of eye drops. Anesthesiology 52:369-379, 1980.

9. Maze M: Clinical implications of membrane receptor function in anesthesia. Anesthesiology 55:160-171, 1981.

10. Scott J, Maze M, Peters TJ: Prednisolone enhances aminopeptidase turnover in the adult rat small intestine. Biochim Biophys Acta 719:464-473, 1982.

11. Maze M, Smith CM: Identification of receptor mechanism mediating epinephrine-induced arrhythmias during halothane anesthesia in the dog. Anesthesiology 59:322-326, 1983

12. Maze M, Mason DM, Kates RE: Verapamil decreases MAC for halothane in dogs. Anesthesiology 59:327-329, 1983.

13. Maze M, Mason DM: Etiology and treatment of halothane-induced arrhythmias. Clinics in Anaesthesiology 1:301-322, 1983.

14. Spiss CK, Smith CM, Maze M: Alpha-adrenergic responsiveness correlates with epinephrine dose for arrhythmias during halothane anesthesia in dogs. Anesth Analg 63:297-300, 1984.

15. Berry AJ, Isaacson IL, Kane MA, Shatz GC, Bastron RD, Maze M, Spiss CK, Rizk SK, Ronai AK, Kimovec MA: Multicenter study of the prevalence of hepatitis B viral serologic markers in anesthesia personnel. Anesth Analg 63:738-742, 1984.

16. Spiss CK, Smith CM, Maze M: Halothane-epinephrine arrhythmias and adrenergic responsiveness following chronic imipramine administration in dogs. Anesth Analg 63:825-828, 1984.

17. Spiss CK, Maze M: Adrenerge Rezeptore: Der Anesthesist 34:1-10, 1985.

18. Spiss CK, Smith CM, Tsujimoto G, Hoffman BB, Maze M: Prolonged hyporesponsiveness of vascular smooth muscle contraction after halothane anesthesia in rabbits. Anesth Analg 64:1-6, 1985.

19. Maze M, Smith CM, Baden JM: Halothane anesthesia does not exacerbate hepatic dysfunction in cirrhotic rats. Anesthesiology 62:1-5, 1985.

20. Metz S, Maze M: Halothane concentration does not alter the threshold for epinephrine-induced arrhythmias in dogs. Anesthesiology 62:470-474, 1985.

21. Berry AJ, Isaacson IJ, Kane MA, Schatz GC, Clark BT, Beaupre P, Derrer S, Kapur P, Thompson J, Martin D, Lange HS, Maze M, Spiss CK, Ronai AK, Komovec MA: A multicenter study of the epidemiology of hepatitis B in Anesthesia Residents. Anesth Analg 64:672-676, 1985.

22. Gaba DM, Metz S, Maze M: Post-countershock myocardial damage after pretreatment with adrenergic and calcium channel antagonists in halothane-anesthetized dogs. Anesthesiology 62:610-614, 1985.

23. Metz S, Maze M: Antiarrhythmic effect of verapamil may be independent of calcium channel blockade. Anesthesiology 63; 233, 1985

24. Maze M, Hayward E, Gaba DM: Alpha-1 adrenergic blockade raises epinephrine-arrhythmia threshold in halothane-anesthetized dogs in a dose-dependent fashion. Anesthesiology 63:611-615, 1985.

25. Baden JM, Kundomal YR, Luttropp ME, Maze M, Kosek JC: Effects of volatile anesthetics or fentanyl on hepatic function in cirrhotic rats. Anesth Analg 64:1183-1188, 1985.

26. Maze M, Spiss CK, Tsujimoto G, Hoffman BB: Epinephrine infusion induces hyporesponsiveness of vascular smooth muscle. Life Sci 37:1571-1578, 1985.

27. Prokocimer PG, Nicholls E, Gaba DM, Maze M: Epinephrine arrhythmogenicity is enhanced by acute, but not chronic, aminophylline administration during halothane anesthesia in dogs. Anesthesiology 65:13-18, 1986.

28. Nicholls EA, Louie GL, Prokocimer PG, Maze M: Halothane anesthetic requirements are not affected by aminophylline treatment in rats and dogs. Anesthesiology 65:637-641, 1986.

29. Louie GL, Prokocimer PG, Nicholls EA, Maze M: Aminophylline shortens thiopental sleep-time and enhances noradrenergic neurotransmission in rats. Brain Research 383:377-381, 1986.

30. Pearl RG, Maze M, Rosenthal MH: Pulmonary and systemic hemodynamic effects of central venous and left atrial vasopressor administration in the dog. Journal of Cardiothoracic Anesthesia 1:29-35, 1987.

31. Rice SA, Maze M, Smith CM, Kosek JC, Mazze RI: Halothane hepatotoxicity in Fischer 344 rats pretreated with isoniazid. Toxicology and Applied Pharmacology 87:411-419, 1987.

32. Prokocimer PG, Maze M, Hoffman BB: Role of the sympathetic nervous system in the maintenance of hypertension in rats harboring pheochromocytoma. J Pharmacol Exp Ther 241:870-874, 1987.

33. Maze M, Birch B, Vickery RG: Clonidine reduces halothane MAC in rats (Correspondence; Peer-Reviewed). Anesthesiology 67: 868-869, 1987.

34. Birch BD, Louie GL, Vickery RG, Gaba DM, Maze M: L-Phenylisopropyladenosine (LPIA) diminishes halothane anesthetic requirements and decreases noradrenergic neurotransmission in rats. Life Sciences 42: 1355-1360, 1988.

35. Prokocimer PG, Maze M, Vickery R, Kraemer F, Gandjei R, Hoffman B: Mechanism of halothane-induced inhibition of isoproterenol-stimulated lipolysis in isolated adipocytes. Molecular Pharmacology 33:338-343, 1988.

36. Maze M, Vickery RG, Merlone SC, Gaba DM: Anesthetic and hemodynamic effects of the alpha-2 adrenergic agonist, azepexole, in isoflurane-anesthetized dogs. Anesthesiology 68:689-694, 1988

37. Vickery RG, Sheridan BC, Segal IS, Maze M: Anesthetic and hemodynamic effects of the stereoisomers of medetomidine, an alpha-2 adrenergic agonist, in halothane-anesthetized dogs. Anesth Analg 67:611-615, 1988

38. Prokocimer PG, Maze M, Vickery RG, Hoffman BB: Mechanism for desensitization of –beta-adrenergic response in fat cells. Endocrinology 123:528-533, 1988

39. Cauvi D, Maze M, Fuchslocher G: Orthopedic-orthodontic treatment planning for the cleft palate child. Odontol Chil. 36; 44-52 1988

40. Segal IS, Vickery RG, Sheridan BC, Doze VA, Maze M: Dexmedetomidine diminishes halothane anesthetic requirements in rats through a postsynaptic alpha-2 adrenergic receptor. Anesthesiology 69:818-823, 1988

41. Maze M, Prokocimer PG, Marty JM, Syrota A, Seto M, Kraemer FB, Hoffman BB: Perioperative changes in adrenergic responsiveness: Effects of anesthetics on adrenoceptor effector mechanisms. Neurology and Neurobiology 42C:461-468, 1988.

42. Doze VA, Chen B-X, Li Z, Maze M: Pharmacologic characterization of the receptor mediating the hypnotic action of D-medetomidine. Acta Veterinaria Scandinavica 85:61-64, 1989

43. Vickery RG, Maze M: Action of the stereoisomers of medetomidine in halothane-anesthetized dogs. Acta Veterinaria Scandinavica 85:71-76, 1989

44. Segal IS, Vickery RG, Maze M: Dexmedetomidine decreases halothane anesthetic requirements in rats. Acta Veterinaria Scandinavica 85:55-59, 1989

45. Maze M, Segal IS, Bloor BC: Clonidine and other alpha-2 adrenergic agonists. Journal of Clinical Anesthesia 1:149-157, 1989

46. Maze M: Anesthesia and ion channel function in the autonomic nervous system. Int Anesthesiol Clin 27:248-258, 1989.

47. Weinger MB, Segal IS, Maze:. Dexmedetomidine, acting through central alpha-2 adrenoceptors, prevents opiate-induced muscle rigidity in the rat. Anesthesiology 71:242-249, 1989.

48. Doze VA, Chen B-X, Maze : Dexmedetomidine produces a hypnotic-anesthetic action in rats via activation of central alpha-2 adrenoceptors. Anesthesiology 71:75-79, 1989.

49. Doze VA, Chen B-X, Tinklenberg JA, Segal IS, Maze M: Pertussis toxin and 4-aminopyridine differentially affect the hypnotic-anesthetic action of dexmedetomidine and pentobarbital. Anesthesiology 73:304-307, 1990.

50. Maze M: Transmembrane signalling and the holy grail of anesthesia. Anesthesiology 72:959-961, 1990.

51. Segal IS, Walton JK, Irwin I, DeLanney LT, Ricaurte GA, Langston JW, Maze M: Modulating role of dopamine on anesthetic requirements. Eur J Pharm. 186: 9-15, 1990.

52. De Campli WM, Baldwin JC, Hagberg RC, Gaba DM, Maze M: Adrenergic characteristics of the pulmonary artery "barorefelex". J Appl Cardiology. 5:339-347, 1990.

53. Maze M. The role of alpha-2 agonists in anesthesia. Advances in Anesthesia 8:115-156, 1990.

54. Segal IS, Jarvis DD, Duncan SR, White PF, Maze M: Clinical efficacy of oral-transdermal clonidine combinations during the perioperative period. Anesthesiology 74:220-225, 1991.

55. Maze M and Tranquilli : Alpha-2 adrenoceptors agonists: defining its role in clinical anesthesia. Anesthesiology 74:581-605, 1991.

56. Guo T-Z, Maze B, Maze M: Attenuation of central alpha-2 adrenergic action in diabetic rats. J Pharm Biochem & Behav 39:383-387, 1991.

57. Hayashi Y, Sumikawa K, Maze M, Yamatodani, Kamibayashi T, Kuro M, Yoshiya I. Dexmedetomidine prevents epinephrine-induced arrhythmias through stimulation of central alpha-2 adrenoceptors in halothane-anesthetized dogs. Anesthesiology 75:113-117, 1991.

58. Tinklenberg JA, Segal IS, Guo T-Z, Aldrich R, Maze M: Analysis of anesthetic action on the potassium channels of the Shaker mutants of drosophila. Ann NY Acad Sci 625:524-534, 1991.

59. Maze M, Regan JW: Role of signal transduction in anesthetic action of alpha-2 adrenergic agonists. Ann NY Acad Sci 625:409-423, 1991.

60. Maze M, Virtanen R et al: Effects of dexmedetomidine, a novel imidazole sedative-anesthetic agent, on adrenal steroidogenesis: in vivo and in vitro studies. Anesth Analg 73:204-208, 1991.

61. Guo T-Z, Tinklenberg J, Oliker R, Maze M: Central alpha-1 adrenoceptor stimulation functionally antagonizes the hypnotic response to dexmedetomidine, an alpha-2 adrenoceptor agonist. Anesthesiology 75:252-256, 1991.

62. Savola MKT, Woodley SJ, Maze M, Kendig JJ: Isoflurane and an alpha-2 adrenoceptor agonist suppress nociceptive neurotransmission in neonatal rat spinal cord. Anesthesiology 75:113-117, 1991.

63. Kendig JJ, Savola MKT, Woodley SJ, Maze M: Alpha-2 adrenoceptors inhibit a nociceptive response in neonatal rat spinal cord. Eur J Pharmacol. 192:293-300, 1991.

64. Savola MKT, MacIver MB, Doze VA, Kendig JJ, Maze M: The alpha-2 adrenoceptor agonist dexmedetomidine increases the apparent potency of the volatile anesthetic isoflurane in rats in vivo and in hippocampal slice in vitro. Brain Research 548:23-28, 1991.

65. Hayashi Y, Sumikawa K, Maze M: Mechanism of antiarrhythmic effect of dexmedetomidine on epinephrine-induced arrhythmias (Correspondence; Peer-Reviewed). Anesthesiology 75:1116-1117, 1991

66. Schwinn SA, Correa-Sales C, Page SO, Maze : Functional effects of activation of α_1-adrenergic receptors by dexmedetomidine: in vivo and in vitro studies. J Pharm Exp Ther 259:1147-1152, 1991

67. Ford SR, Maze M, Gaba D: A comparison of etomidate and thiopental anesthesia for cardioversion. J Cardiothoracic and Vascular Anesthesia 5:563-565, 1991

68. Salonen MA, Kanto JH, Maze : Clinical interactions with alpha-2 adrenergic agonists in anesthetic practice. J Clin Anesth 4:164-172, 1992 .

69. Fujinaga M, Maze M, Hoffman BB, Baden JM: Activation of alpha-1 adrenergic receptors modulates the control of left/right sideness in rat embryos. Developmental Biology 150: 419-421, 1992.

70. Correa-Sales C, Rabin BC, Maze: A hypnotic response to dexmedetomidine, an alpha-2 agonist is mediated in the locus coeruleus in rats. Anesthesiology 76:948-952, 1992.

71. Jarvis DA, Duncan S, Segan IS, Maze: Ventilatory effects of clonidine alone, and the presence of alfentanil, in human volunteers. Anesthesiology 76: 899-905, 1992.

72. Salonen M, Reid KR, Maze M: Synergistic interaction alpha-2 adrenergic agonists and benzodiazepines in rats. Anesthesiology 76:1004-1011, 1992

73. Salonen M, Onaivi ES, Maze M: Dexmedetomidine synergism with midazolam in the elevated plus - Maze test in rats. Psychopharmacology 108:229-234, 1992.

74. Belleville JP, Ward DS, Bloor BC, Maze M: Effects of intravenous dexmedetomidine in humans. I. Sedation, ventilation, and metabolic rate. Anesthesiology 77:1125-1133, 1992.

75. Bloor BC, Ward DS, Belleville JP, Maze M: Effects of intravenous dexmedetomidine in humans. II. Hemodynamic change. Anesthesiology 77:1134-1142 1992.

76. Correa-Sales C, Nacif-Coelho C, Reid K, Maze M: Inhibition of adenylate cyclase in the locus coeruleus mediates the hypnotic response to an alpha-2 agonist in the rat.
J Pharmacology & Experimental Therapeutics 263:1046-1049, 1992.

77. Correa-Sales C, Reid K, Maze M: Pertussis toxin-mediated ribosylation of G proteins blocks the hypnotic response to an alpha-2 agonist in the locus coeruleus of the rat. Pharmacology, Biochemistry, Behavior 43:723-727,1992.

78. Dyck JB, Maze M, Haack C, Vuorilehto L, Shafer SL: The pharmacokinetics and hemodynamic effects of intravenous and intramuscular dexmedetomidine hydrochloride in adult human volunteers. Anesthesiology 78:813-820, 1993

79. Maze M, Scheinin M: Molecular Pharmacology of alpha-2 adrenergic receptors. Anesthetic Pharmacology Review 1:233-237, 1993

80. Dyck JB, Maze M, Haack C, Azarnoff DL, Vuorilehto L, Shafer SL: Computer-controlled infusion of intravenous dexmedetomidine hydrochloride in adult human volunteers. Anesthesiology 78:821-828, 1993

81. Hayashi Y, Kamibayashi T, Maze M, Yamatodani A, Sumikawa K, Kuro M, Yoshiya I. Role of imidazoline-preferring receptors in the genesis of epinephrine-induced arrhythmias in halothane-anesthetized dogs. Anesthesiology, 78:524-530, 1993

82. Zornow MH, Maze M, Dyck B, Shafer SL: Dexmedetomidine decreases cerebral blood flow velocity in humans. J Cerebral Blood Flow and Metabolism 13:350-3, 1993

83. Salonen M, Maze M: Implementation of a Radioreceptor Assay for Dexmedetomidine. Pharmacology and Toxicology 73:254-256, 1993

84. Hayashi Y, Maze M: Alpha-2 adrenoceptor agonists and anaesthesia. British Journal of Anaesthesia 71:108-18, 1993

85. Matsumoto M, Zornow MH, Rabin BC, Maze M: The alpha-2 adrenergic agonist, dexmedetomidine, selectively attenuates ischemia-induced increases in striatal norepinephrine concentrations. Brain Research.627:325-329, 1993

86. Maier C, Steinberg GK, Sun GH, Tian Zhi G, Maze M: Neuroprotection by the alpha-2 adrenoceptor agonist, dexmedetomidine, in a focal model of cerebral ischemia. Anesthesiology 79:306-12, 1993

87. Daunt DA, Dunlop CI, Chapman PL, Shafer SL, Ruskoaho H, Vakkuri O, Hodgson DS, Tyler LM, Maze M: Cardiopulmonary and behavioral responses to computer-driven infusions of detomidine in standing horses. Am J Vet Res. 54:2075-2082, 1993

88. Reid K, Hayashi Y, Guo T-Z, Correa-Sales C, Nacif-Coelho C, Maze M: Chronic administration of an alpha-2 adrenergic agonist desensitizes rats to the anesthetic effects of dexmedetomidine. Pharmacology Biochemistry Behavior 47:171-175, 1994

89. Nacif-Coelho C, Correa-Sales C, Chang LL, Maze M: Perturbation of ion channel conductance alters the hypnotic response to the alpha-2 adrenergic agonist dexmedetomidine in the locus coeruleus of the rat. Anesthesiology 81:1527-1534, 1994

90. Hayashi Y, Guo T-Z, Maze M: Desensitization to the behavioral effects of alpha-2 adrenergic agonists in rats. Anesthesiology 82:954-962, 1995

91. Mizobe T, Maze M: Alpha-2 adrenoceptor agonists and anesthesia. Int Anesthesiol Clin 33:81-102, 1995

92. Maze M, Poree L, Rabin BC: Anaesthetic and analgesic action of alpha-2 adrenoceptor agonists. Pharmacology Communications 6:175-182, 1995.

93. Seidel, W.F., M. Maze, W.C. Dement and D.M. Edgar: Alpha-2 adrenergic modulation of sleep: time-of-day-dependent pharmacodynamic profiles of dexmedetomidine and clonidine in the rat. J. Pharmacol. Exp. Ther. 275:263-273,1995

94. Hayashi, Y, Rabin BC, Guo T-Z, Maze M: The role of pertussis toxin-sensitive g proteins in the analgesic and anesthetic actions of alpha-2 adrenergic agonists in the rat. Anesthesiology 83:816-822, 1995

95. Mizobe T, Maze M, Lam V, Suryanarayana S, Kobilka BK: Arrangement of transmembrane domains in adrenergic receptors: Similarity to Bacteriorhodopsin. J Biological Chemistry 271:2387-2389, 1996

96. Buttermann AE, Maze M: Alpha-2 adrenergic agonists in Anesthesiology. Seminars in Anesthesia 15:27-40, 1996

97. Guo T-Z, Buttermann AE, Jiang J-Y, Maze M: Dexmedetomidine injection into the locus coeruleus produces analgesia. Anesthesiology 84:873-881, 1996

98. Kim HK, Zornow MH, Strnat MAP, Maze M: Dexmedetomidine does not attenuate increases in excitator yamino acids after transient global ischemia in the rabbit. J Neurosurgical Anesthesiology 8:230-235, 1996

99. Rabin BC, Guo T-Z, Gregg K, Maze M: The role of alterations in serotonergic neurotransmission in the hypnotic response to dexmedetomidine, a selective alpha-2 adrenoceptor agonist. Eur J Pharmacol 306:51-59, 1996

100. Rabin BC, Reid K, Guo T-Z, Gustaffson E, Zhang C, Maze M: The sympatholytic and mac-sparing responses are preserved in rats rendered tolerant to the hypnotic and analgesic action of dexmedetomidine, a selective alpha-2 adrenergic agonist. Anesthesiology 85:565-573, 1996

101 Mizobe T, Maghsoudi K, Sitwala K, Guo T-Z, Ouj J, Maze M: Antisense technology reveals the alpha-2A adrenoceptor to be the subtype mediating the hypnotic response to the highly selective agonist, dexmedetomidine, in the locus coeruleus of the rat. J Clin Inest 98; 1076-80 1996

102. Kamibayashi T, Maze M: Perioperative use of alpha-2 adrenergic agonists. Current Opinion in Anaesthesiology 9:323-327, 1996

103. Hayashi, Y, Guo T-Z, Maze M: Hypnotic and analgesic effects of the alpha-2 adrenergic agonist dexmedetomidine in morphine tolerant rats. Anesth Analg 83:606-610, 1996

104. Guo T-Z, Poree L, Golden W, Stein J, Fujinaga M, Maze M: The antinociceptive response to nitrous oxide is mediated by supraspinal opiate and spinal alpha-2 adrenegic receptors in the rat. Anesthesiology 85:846-852, 1996

105. Mizobe M, Maghsoudi K, Sitwala K, Tianzhi G, Ou J, Maze M: Antisense technology reveals the alpha 2A adrenoceptor to be the subtype mediating the hypnotic response to the highly-selective agonist, dexmedetomidine in the locus coeruleus of the rat. J Clinical Investigation 98:1076-1080, 1996

106. Kamibayashi T, Harasawa K, Maze M: Alpha 2 adrenergic agonists. Can J Anaesth 44; R131-22 1997

107. Reid K, Hsu J, Maguire PA, Rabin BC, Guo T-Z, Maze M: Chronic administration of dexmedetomidine decreases an alpha-2 adrenergic receptor binding affinity, ribosylation of PTX-sensitive G proteins, and inhibition of adenylyl cyclase in the locus coeruleus of rats. Pharmacology Biochemistry Behavavior 57:63-71,1997

108. Rabin BC, Guo T-Z, Maze M: Dissociation of hypnotic-anesthetic actions of alpha-2 agonists from cyclic AMP in the rat. Pharmacology Biochemistry Behavior 57:23-29, 1997

109. Mizobe T; Maze M: Molecular Pharmacology of alpha-2 adrenoceptors; relevance to anesthesia. Anesthesiology Clinics of North America 1:1-26,1997

110. Lakhlani PP, MacMillan LB, Guo T-Z, McCool BA, Lovinger DM, Maze M, Limbird LE: Substitution of a mutant alpha 2A- adrenergic receptor via "hit and run" targeting reveals the role of this subtype in sedative, analgesic, and anesthetic-sparing responses. PNAS 94:9950-9955, 1997

111. Reid K, Guo T-Z, Davies MF, Maze : Nifedipine, a L-type calcium channel blocker, restores the hypnotic response in rats made tolerant to the alpha-2-adrenergic agonist dexmedetomidine. J Pharmacol Experimental Therapeutics 283: 993-999, 1997

112. Fang F Guo T-Z, Davies MF, Maze M: Opiate receptors in the periaqueductal gray mediate analgesic effect of nitrous oxide in rats. European J Pharmacology 336:137-41, 1997

113. Kamibayashi T, Harasawa K, Maze M: Alpha-2 adrenergic agonists. Can J Anaesth 44: R13-R22, 1997

114. Maze M: Why does insensitivity to opioid narcotics develop? Anesthesiology 87:1033-1034, 1997

115. Maze M: "Exciting" aspects of opiate receptor signal transduction. Anesthesiology 87:1032-1033, 1997

116. Poree LR, Guo T-Z, Kingery WS, Maze : Evidence for the role of peripheral alpha-2 adrenoceptors in inhibition of neuropathic thermal and mechanical hyperalgesia. Anesthesia and Analgesia 87:941-948, 1998

117. Buttermann AE, Reid KR, Maze M: Are Cholinergic Pathways involved in the anesthetic response to alpha-2 agonists. Toxicology Letters 100:17-22, 1998

118. Guo T-Z Reid K, Davies MF, Nacif-Coelho C, Rabin BC, Gonzalez F, Maze: Chronic desipramine treatment desensitizes the rat to anesthetic and antinociceptive effects of the a-2 adrenergic agonist dexmedetomidine. Anesthesiology 88:1634-1642, 1998

119. MacMillan LB, Lakhlani PP, Hein L, Piscik M, Guo T-Z, Lovinger DM, Maze M, Limbird LE: In vivo mutations of the alpha 2A-adrenergic receptor by homologous recombination reveals the role of this receptor subtype in multiple physiological processes. Adv Pharmacol 42:493-496, 1998

120. Kingery WS, GuoT-Z, Poree LR, Maze M: Colchicine treatment of the sciatic nerve reduces neurogenic extravasation, but does not affect nociceptive thresholds or collateral sprouting in neuropathic or normal rats. Pain, 74:11-20, 1998

121. Poree LR, Guo T-Z, Kingery WS, Maze M: The analgesic potency of dexmedetomidine is enhanced after nerve injury: a possible role for peripheral alpha-2 adrenoceptors. Anesth Analg. 87; 941-8 1998

122. Guo T-Z, Davies MF, Kingery WS, Maze: Nitrous oxide produces antinociceptive response via alpha 2B and/or alpha adrenoceptor subtypes in mice. Anesthesiology 90 470-6 1999

123. Kingery, W.S., Castellote, J.M., Maze M: Methylprednisolone prevents the development of autotomy and neuropathic edema in rats, but has no effect on nociceptive thresholds. Pain 80: 555-556 1999.

124. Zhang C, Davies MF, Guo T-Z, Maze M: The analgesic action of nitrous oxide is dependent on the release of norepinephrine in the dorsal horn of the spinal cord. Anesthesiology 91; 1401-7 1999

125. Kingery, W., Guo, T.-Z., Davies, M.F., Limbird, L., Maze, M: The alpha 2A adrenoceptor and the sympathetic postganglionic neuron contribute to the development of neuropathic heat hyperalgesia in mice. Pain 85: 345-58 2000

126. Maze M, Talke P, Hassan E: Dexmedetomidine: Viewpoints. Drugs 59:269-270, 2000

127. Kamibayashi, T, Maze M: Clinical Uses of alpha-2 adrenergic agonists. Anesthesiology 93: 1345-1349 2000

128. Maze M, Fujinaga M: Recent Advances in understanding the actions and toxicity of nitrous oxide. Anaesthesia 55: 311-4 2000

129. Maze M, Fujinaga M: Alpha-2 adrenoceptors in pain modulation: which subtype should be targeted to produce analgesia? Anesthesiology 92: 934-6 2000

130. Sawamura S, Kingery WS, Davies MF, Agashe GS, Clark JD, Kobilka BK, Hashimoto T, Maze M: Antinoceptive action of nitrous oxide is mediated by stimulation of noradrengeric neurons in the brainstem and activation of (alpha) 2B adrenoceptors. J Neurosci 20: 9242-51 2000

131. Fender C, Fujinaga M, Maze M: Strain differences in the antinociceptive effect of nitrous oxide on the tail flick test in rats. Anesth Analg 90; 195-9 2000

132. Fujinaga M, Doone R, Davies MF, Krane EJ, Maze: Nitrous oxide lacks the antinociceptive effect on the tail flick test in in newborn rats. Anesth Analg 91; 6-10 2000

133. Kingery WS, Agashe GS, Sawamura S, Davies MF, Clark JD, Maze M: Glucocorticoid inhibition of neuropathic hyperalgesia and spinal C Fos expression. Anesth Analg 92(2):476-482, 2001

134. Anand KJ, Maze M. Fetuses, fentanyl, and the stress response: signals from the beginnings of pain? Anesthesiology 95:823-5, 2001

135. Jones ME, Maze M. Can we characterize the central nervous system actions of alpha2-adrenergic agonists? Br J Anaesth 86:1-3, 2001

136. Kingery WS, Guo T, Agashe GS, Davies MF, Clark JD, Maze M Glucocorticoid inhibition of neuropathic limb edema and cutaneous neurogenic extravasation. Brain Res 913:140-8, 2001

137. Hashimoto T, Maze M, Ohashi Y, Fujinaga M. Nitrous oxide activates GABAergic neurons in the spinal cord in Fischer rats. Anesthesiology 95:463-9, 2001

138. Maze M, Scarfini C, Cavaliere F. New agents for sedation in the intensive care unit. Crit Care Clin. 17:881-97, 2001

139. Davies MF, Reid K, Guo TZ, Agashe GS, Amin YK, Maze M. Sedative but not analgesic alpha2 agonist tolerance is blocked by NMDA receptor and nitric oxide synthase inhibitors. Anesthesiology. 95:184-91, 2001

140. Kingery WS, Agashe GS, Guo T, Sawamura S, Davies MF, Clark JD, Kobilka BK, Maze M. Isoflurane and nociception: Spinal α_{2A} adrenoceptors mediate antinociception while supraspinal α_1 adrenoceptors mediate pronociception. Anesthesiology 96:367-374, 2002

141. Kingery WS, Agashe GS, Guo TZ, Davies MF, Clark JD, Maze M. Capsaicin sensitive afferents mediate the development of heat hyperalgesia and hindpaw edema after sciatic section in rats. Neurosci Lett. 318:39-43, 2002

142. Takada K, Clark JD, Davies MF,Tonner PH, Bertaccinni E, Maze M. Meperidine exerts agonist activity at the α_{2B} adrenoceptor. Anesthesiology 96:1420-6, 2002

143. Fujinaga M, Maze M. Neurbiology of nitrous oxide induced antinociceptive effects. Molecular Neurobiology 25:167-89, 2002.

144. Hashimoto T, Ohashi Y, Nelson LE, Maze M, Fujinaga M. Developmental variation in nitrous oxide-iduced c-Fos expression in Fischer rat spinal cord. Anesthesiology 96:249-51, 2002

145. Wilhelm S, Ma D, Maze M, Franks NP. Effects of xenon on in vitro and in vivo models of neuronal injury Anesthesiology. 96:1485-91, 2002

146. Nelson LE, Guo TZ, Lu J, Saper CB, Franks NP, Maze M. The sedative component of anesthesia is mediated by GABA(A) receptors in an endogenous sleep pathway. Nat Neurosci. 5:979-84, 2002

147. Ma D, Wilhelm S, Maze M, Franks NP. Neuroprotective and neurotoxic properties of the "inert" gas xenon (British Journal of Anaesthesia)

148. Coull JT , Jones MEP, Egan T , Frith CD , Maze M. Arousal level modulates the effects of α_2 agonists on attention. (Submitted to Nature Neuroscience)

Books Edited

1. Yaksh TL Lynch III C, Zapol W. Maze M, Saidman LJ, Biebuyck JF Anesthesia Biologic Foundations Lippincott 1997
2. Maze M, and Morrison P. Redefining Sedation. Royal Society of Medicine Press Limited, 1998
3. Ever AS, Maze M. Anesthetic Pharmacology: Physiological Principles and Clinical Practice. Harcourt (In Press).

Book Chapters

1. Bloor BC, Maze M, Segal IS. Interaction between adrenergic and opioid pathways. *In* Opioids in Anesthesia, Published by Butterworth-Heineman, 1991

2. Salonen M, Maze M. Molecular mechanism of action for hypnotic and sedative agents used in anesthetic practice. *In* Feldman SA, Paton W, Scurr C (eds) Mechanisms of drugs in Anesthesia. Published by Hodder & Stoughton.1993

3. Maze M, Scheinin M. Molecular pharmacology of alpha-2 adrenergic receptors. *In* Alpha-2 adrenergic agonists in anesthesia. Published by Elsevier Press.1991

4. Brodsky JB, Maze M. Injury to the Anesthetist. *In* Anesthesia and Perioperative Complications, Ed Benumof JL, Saidman LJ. Published by CV Mosby St Louis.1992

5. Maze M. Clinical uses of alpha-2 agonists. *In* ASA Refresher course publication Volume 20. Published by Lippincott.1992

6. Daunt DA, Maze M. α_2-adrenergic agonist receptors, sites, and mechanisms of action. *In* Animal Pain Edited By Short CE, Poznal AV. Published by Churchill Livingstone. 1992.

7. Gelman S, Maze M. Hepatic Physiology *In* Anesthesia, 4th Edition, Published by Churchill Livingstone. 1994

8. Maze M,. Anesthesia for patients with liver disease *In* Anesthesia, 4th Edition, Published by Churchill Livingstone, 1994

9. Hayashi Y, Maze M. Drugs affecting adrenoceptors: α_2 agonists *In* The Pharmacologic Basis of Anesthesiology Edited by Bowdle TA, Horita A, Kharasch ED. Published by Churchill Livingstone. 1994

10. Maze M, Daunt DA, Salonen M. Current Research in Anesthesia and Trends in Clinical Applications. in Anaesthesia and Analgesia in Laboratory Animals. Eds Cohn DF, Benson GJ .1995

11. Maze M, Butterman AE. G protein coupled receptors. *In* Anesthesia Biologic Foundations eds Biebuyck JF, Lynch III C, Maze M, Saidman LJ, Yaksh TL, Zapol W. 1997

12. Maze M, Buttermann AE, Kamibayashi T, Mizobe T. α_2 Adrenergic agonists. *In* Textbook of Intravenous Anesthesia ed White PF. Williams and Wilkins 1997

13. Kingery WS, Davies MF, Maze M. Molecular Mechanisms for the analgesic properties of alpha-2 adrenergic agonists. *In* Molecular Neurobiology of Pain, Progress in Pain Research and Management, Vol 9, edited by D. Borsook, IASP Press, Seattle, 1997

14. Maze M. Drug Addiction. *In* complications in Anesthesia. ed J Atlee. W.B.Saunders, 1998

15. Maze M, Bass A.N.Anesthesia and the Hepatobiliary System. *In* Anaesthesia 5th Edition.eds Miller RD, Miller ED. Churchill Livingstone, 1998

16. Parks D, Gelman S, Maze M. Pathophysiology of Liver Disease *In* Anaesthesia 5th Edition.eds Miller RD, Miller ED. Churchill Livingstone, 1998

17. Maze M, Hunter J. Gaeta R Management of Pain and Conscious Sedation. *In* Melmon & Morelli's Clinical Pharmacology: The Principles and Practical Applications of Therapeutics. McGraw-Hill, 1999

18. Maze M. Sedation in the intensive care unit. *In* Redefining Sedation eds, Maze M, and Morrison P. Royal Society of Medicine Press Limited, 1998

19. Dexmedetomidine: a general overview. Duke P, Maze M, Morrison P. *In* Redefining Sedation eds, Maze M, and Morrison P. Royal Society of Medicine Press Limited, 1998

20. Maze M.The role of alpha-2 agonists in Anesthesiology *in* Anesthesia for the New Millienium eds Stanley TH, Egan TD. Kluwer Academic Publishers 1999

21. Maze M. Drug Addiction Among Anesthesiologists *in* Anesthesia for the New Millienium eds Stanley TH, Egan TD. Kluwer Academic Publishers 1999

22. Maze M. Sedation in the Intensive Care Environment *in* Yearbook of Intensive Care and Emergency Medicine. Ed J.-L. Vincent, Springer 2000.